

### Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the Application.

1-31. (CANCELED)

32. (CURRENTLY AMENDED) A semiconductor surface free of interfacial reactions between the surface and a second molecular species comprising:

a semiconductor surface with one atomic layer of valence-mending atoms and a second molecular species, wherein the valence-mending atoms comprise atoms that create a second surface on the one atomic layer and in contact with the second molecular species, the second surface without dangling bonds and free of interfacial reactants and wherein the semiconductor surface is a Si(100) surface.

33. (PREVIOUSLY PRESENTED) The semiconductor surface of claim 32, wherein the second molecular species is selected from the group consisting of metals, dielectrics, dielectric precursors, metal oxides, oxygen, water vapor, carbon, hydrogen, carbon dioxide, carbon monoxide, and combinations thereof.

34. (ORIGINAL) The semiconductor surface of claim 32, wherein the semiconductor surface is selected from the group consisting of silicon, germanium, silicon-germanium and silicon-carbide.

35. (CURRENTLY AMENDED) The semiconductor surface of claim 32, wherein the valence mending atoms are from passivating the semiconductor surface with a passivating agent, the passivating agent selected from the group consisting of Group V, VI, or VII coGENER, and hydrogen.

36. (ORIGINAL) The semiconductor surface of claim 32, wherein interfacial reactions are selected from the group consisting of oxidation, chemical adsorption, solidification, and combinations, thereof.

37-40. (CANCEL)

41. (PREVIOUSLY PRESENTED) The semiconductor surface of claim 35, wherein the passivating agent is temperature sensitive.

42. (PREVIOUSLY PRESENTED) The semiconductor surface of claim 41, wherein a temperature below 700 degrees Centigrade prevents interfacial reactions.

43. (PREVIOUSLY PRESENTED) The semiconductor surface of claim 33, wherein the dielectric and dielectric precursor is a high dielectric constant material with a dielectric constant larger than 4.